

CANDIDATE AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Opuntia corallicola (Small) Werdermann

COMMON NAME: Florida semaphore cactus

LEAD REGION: 4

INFORMATION CURRENT AS OF: January 19, 2001

STATUS/ACTION (Check all that apply):

☐ New candidate

☒ Continuing candidate

☒ Non-petitioned

☐ Petitioned - Date petition received: ____

☐ 90-day positive - FR date: ____

☐ 12-month warranted but precluded - FR date: ____

☐ Is the petition requesting a reclassification of a listed species?

☐ Listing priority change

 Former LP: ____

 New LP: ____

☐ Candidate removal: Former LP: ____ (Check only one reason)

☐ A - Taxon more abundant or widespread than previously believed or not subject to a degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

☐ F - Range is no longer a U.S. territory.

☐ M - Taxon mistakenly included in past notice of review.

☐ N - Taxon may not meet the Act's definition of "species."

☐ X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Plant - Cactaceae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Florida

CURRENT STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Florida

LEAD REGION CONTACT (Name, phone number): Lee Andrews, 404/679-7217

LEAD FIELD OFFICE CONTACT (Office, name, phone number): Vero Beach, Florida Field Office, Dave Martin, 561/562-3909 ext. 230

BIOLOGICAL INFORMATION (Describe habitat, historic vs. current range, historic vs. current population estimates (# populations, #individuals/population), etc.):

Opuntia corallicola is a large prickly pear cactus with a distinct trunk and a cluster of pads at the top. The flowers are relatively small. Fallen flowers are capable of sprouting into new plants, and between the fall of flowers and breakage of pads, mature plants tend to be surrounded by smaller developing plants. This cactus grows on bare rock with a minimum humus-soil cover in hammocks near sea level (Small 1930, Benson 1982), close to salt water. According to Small (1930), it formerly occurred on Big Pine Key and Key Largo; neither the number of individuals nor the size of those populations were described. Cactus hobbyists were thought to have eliminated the species from Florida in the late 1970s, but it was rediscovered at one site on Little Torch Key in the mid 1980s (Austin et al. 1998). It is presently known from a single remaining wild population of about 7 mature plants at The Nature Conservancy's Torchwood Hammock Preserve on Little Torch Key (D. Gordon, pers. comm. 1999, 2000).

J.K. Small discovered this cactus and named it Consolea corallicola (Small 1930). In 1971, Long and Lakela (1971) reassigned the Keys plants to Opuntia spinosissima Miller, a species from Jamaica. In doing so, they evidently followed the views of Lyman Benson, an expert on North American cacti. Recent research shows that the Florida semaphore cactus is both morphologically and genetically unique and should be recognized as a distinct species (Austin et al. 1998, Gordon and Kobisiak 1998). It is also becoming evident that this species and its close relatives in the Caribbean should be separated from the genus Opuntia into their own genus, Consolea, just as Small and his colleagues at the New York Botanical Garden did about 70 years ago. However, at the present time, the name Opuntia corallicola is in wide use and is unambiguous.

THREATS (Describe threats in terms of the five factors in section 4 of the ESA providing specific, substantive information. **If this is a removal of a species from candidate status or a change in listing priority, explain reasons for change**):

- A. The present or threatened destruction, modification, or curtailment of its habitat or range. Destruction or modification of habitat as a result of development is a threat throughout the range of Opuntia corallicola. Although the species is located at the protected Torchwood Hammock Preserve (owned by The Nature Conservancy), habitat throughout its former range is under intense development pressure. Residential and commercial development, and roadway construction are occurring throughout Monroe County, specifically the Keys.
- B. Overutilization for commercial, recreational, scientific, or educational purposes. Collecting by cactus hobbyists may have eliminated the species from Big Pine Key and Key Largo in the late 1970s. Although the remaining wild population on Little Torch Key is protected by the Torchwood Hammock Preserve, the plants are still subject to collection and vandalism. The present number of adult plants is too small to support any unauthorized collecting.

- C. Disease or predation. Opuntia corallicola is threatened by an exotic insect native to South America. The moth, Cactoblastis cactorum, was introduced with spectacular success into Australia from Argentina in 1925, to control several North and South American species of Opuntia (Habeck and Bennett 1990). It was introduced into several Caribbean islands from 1957 to 1970 and subsequently spread naturally throughout the Caribbean and the Florida Keys to as far north as Key Biscayne (Habeck and Bennett 1990). It has since spread up the Florida coast, and may eventually threaten prickly pears in the southwestern United States and Mexico. This moth, whose larvae burrow into the cactus pad and feed on the tissue, has substantially reduced the abundance of Opuntia in the Keys (Austin et al. 1998). As a result of the moth, all remaining adult plants at the Torchwood Hammock Preserve were placed in screen cages in 1990.
- D. The inadequacy of existing regulatory mechanisms. The Florida Department of Agriculture and Consumer Services has designated the Florida semaphore cactus (Opuntia spinosissima) as endangered under Chapter 5B-40, Florida Administrative Code. This listing regulates commercial trade but provides little or no habitat protection beyond the State's Development of Regional Impact process. This process serves to disclose impacts from projects, but provides no regulatory protection for State-listed plants on private lands. Without local or county ordinances preventing the destruction of the plant, conservation does not occur.
- E. Other natural or manmade factors affecting its continued existence. Hurricanes and other natural disasters can be devastating to small remnant populations, such as the few wild Opuntia corallicola plants on Little Torch Key. Hurricane Georges in September 1998 had a dramatic effect on the population. Eleven plants were broken in half and lost most of their pads (D. Gordon, pers. comm. 1999). However, some parts of plants that landed on the soil did root, producing new plants. It is unknown whether these new individuals will survive to become adults. While the full impact of the hurricane on the plants is still being evaluated, it was definitely negative.

Opuntia corallicola is an obligate outcrossing species as are many cacti. Apparently all of the plants in the population carry the same self-incompatibility allele and even crosses between plants in this population produce no seeds (Negrón-Ortiz 1998). This is likely the result of genetic drift in this small population. The cactus will reproduce itself vegetatively and the best remaining means of reproduction may be human-assisted propagation.

BRIEF SUMMARY OF REASONS FOR REMOVAL OR LISTING PRIORITY CHANGE:

FOR RECYCLED PETITIONS:

- a. Is listing still warranted? ____
- b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? ____
- c. Is a proposal to list the species as threatened or endangered in preparation? ____

d. If the answer to c. above is no, provide an explanation of why the action is still precluded.

LAND OWNERSHIP (Estimate proportion Federal/state/local government/private, identify non-private owners): The Nature Conservancy owns and maintains the Torchwood Hammock Preserve where the last remaining wild population of Opuntia corallicola occurs.

PRELISTING (Describe status of conservation agreements or other conservation activities): The Florida Department of Agriculture and Consumer Services has been conducting studies on research and restoration since 1993 (section 6 funding). The Nature Conservancy has formulated and implemented an informal recovery plan for this species.

Fairchild Tropical Garden maintains this species in its Center for Plant Conservation living collection of endangered plants. It has also propagated plants collected from the Little Torch Key population in an effort to transplant them at Big Pine Key and Key Largo. Results of these activities have yet to be determined.

REFERENCES (Identify primary sources of information (e.g., status reports, petitions, journal publications, unpublished data from species experts) using formal citation format):

Austin, D.F., D.M. Binninger, and D.J. Pinkiva. 1998. Uniqueness of the endangered Florida semaphore cactus (Opuntia corallicola). SIDA 18(2):151-158.

Benson, L. 1982. The cacti of the United States and Canada. Stanford University Press, Stanford, California.

Gordon, D.R. and T.L. Kubisiak. 1998. RAPD analysis of the last populations of a likely Florida Keys endemic cactus. Florida Sci. 61:203-210.

Habeck, D.H. and F.D. Bennett. 1990. Cactoblastis cactorum Berg (Lepidoptera: Pyralidae), a phycitine new to Florida. Florida Department Agriculture and Consumer Services, Division of Plant Industry. Entomology circular No. 333.

Negrón-Ortiz, V. 1998. Reproductive biology of a rare cactus, Opuntia spinosissima (Cactaceae) in the Florida Keys: why is seed set very low? Sexual Plant Reproduction 11:208-212.

Long, R.W. and O. Lakela. 1971. A flora of tropical Florida; a manual of the seed plants and ferns of southern peninsular Florida. University of Miami Press, Coral Gables, Florida.

Small, J.K. 1930. Consolea corallicola, Florida semaphore cactus. Addisonia 15:25-26.

U.S. Census Bureau. 1998. State and metropolitan area data book 1997-1998.

LISTING PRIORITY (place * after number)

THREAT			
Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5*
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all additions of species to the candidate list, annual retentions of candidates, removal of candidates, and listing priority changes.

Approve: _____
Regional Director, Fish and Wildlife Service Date _____

Concur: _____
Director, Fish and Wildlife Service Date _____

Do not concur: _____
Director, Fish and Wildlife Service Date _____

Director's Remarks: _____

Date of annual review: January 19, 2001

Conducted by: Dave Martin - Vero Beach, Florida FO

Changes from October 25, 1999 CNOR(check one) Yes X No

Approval: _____
Regional Director Dated _____

Comments: _____

(rev. 6/00)